

# *Road Asset Management for Rural Roads*

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# What we'll be discussing today....

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- Some AM Principles & examples from international cases
  - Costa Rica
  - Uganda
  - England Councils (various)
  - Australia (Qld State)
- General discussions about implementing an 'Asset Management' approach for your network

# Some areas we'll cover....

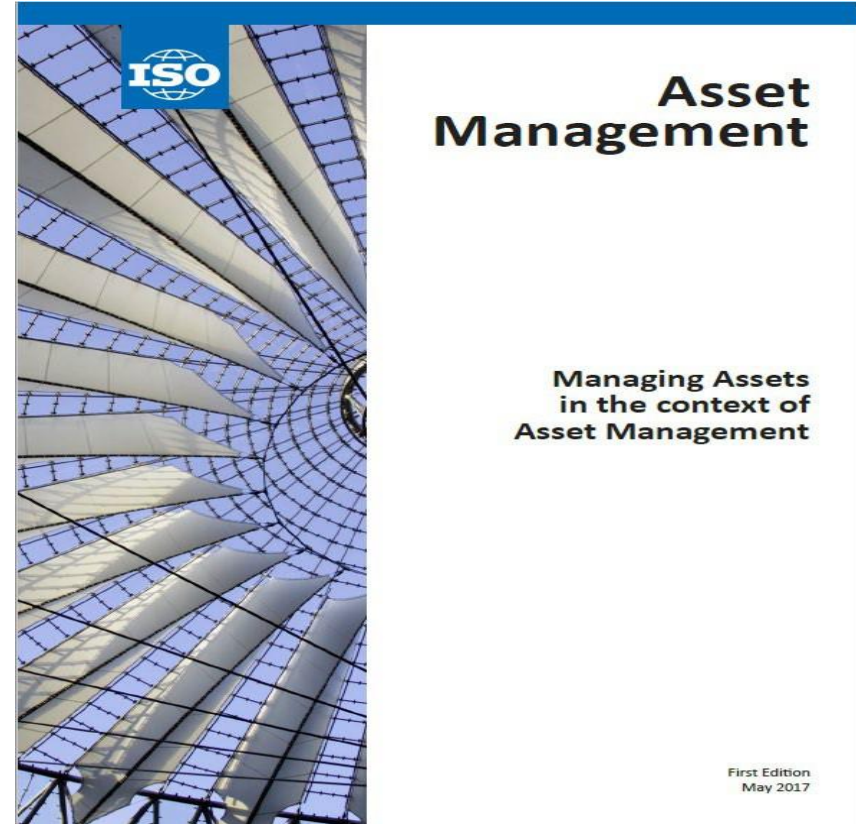
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- Importance of establishing AM Frameworks & Governance to guide your practices
- Strategic and tactical asset management planning
- Data, data and more data
- Turning data into decisions into work on the ground

# ASSET MANAGEMENT DEFINITION

ISO55000  
Definition:

‘coordinated activity  
of an organization to  
realize value from  
assets’

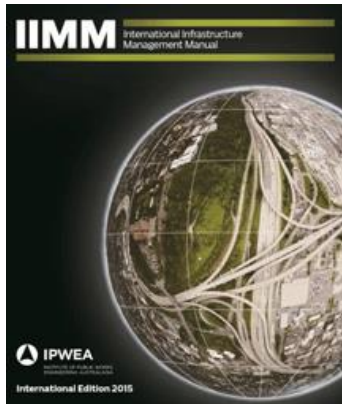


# ASSET MANAGEMENT DEFINITION



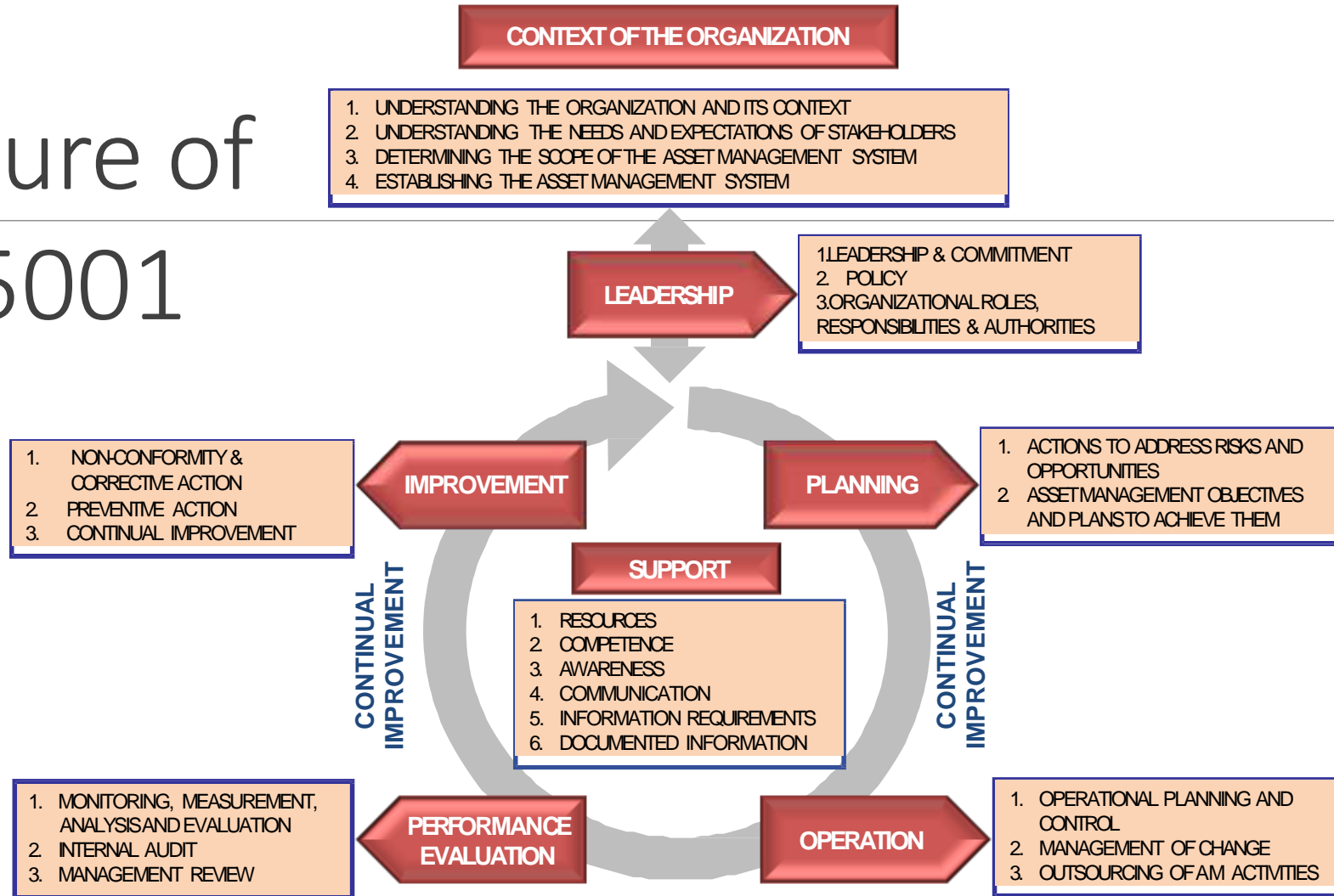
- Asset Management Council:

*“The **life cycle management** of **Physical Assets** to achieve the stated **outputs** of the **enterprise.**”*



- The International Infrastructure Management Manual (IIMM):  
“The combination of management, financial, economic, engineering and other practices applied to physical assets with the objective of providing the required level of service in the most cost-effective manner.”

# Structure of ISO 55001



# Asset Management Framework

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- *The Framework includes all asset management activities normally undertaken by an authority and is flexible to accommodate the requirements of individual authorities. Senior decision makers within authorities should endorse the approach, which should be clearly documented and accessible to relevant stakeholders*
- *It comprises the activities and processes that are necessary to develop, document, implement and continually improve Road Asset Management. These activities and the approach to their delivery should be clearly documented and accessible to relevant stakeholders.*

# An approach to effective implementation...

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1. Understand your Organisational Context – the context within which you have to operate
2. Carry out some form of maturity assessment to:
  - Identify any major gaps in your existing AM practice/systems
  - Provides you with priorities for implementation
3. Engage with key stakeholders & Senior Management for commitment to embedding a strong Asset Management culture



# Implementation continued...

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4. Develop an Asset Management Policy & Strategy, including measurable objectives – set the ‘long-term picture’
5. Establish Existing levels of asset information, systems and organizational capability/competencies
6. Develop Asset / Lifecycle Management Plans to address requirements for asset data and planning to develop Forward Works Programmes
7. Adopt Whole-of-Life approach for your main asset types

# Implementation continued...

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8. Create plans to ensure stakeholders are engaged and informed, and senior commitment is maintained
9. Resource Management planning – includes organizational review, capability/capacity strengthening (incl training), procurement/contract delivery models
10. Measurable progress is key against Plans and actions outlined

## ORGANISATIONAL CONTEXT

### Political Commitment

Kampala CCA Elected Members  
Eng & Tech Services Directorate

### KCCA Government Strategy & Guidance

KCCA Strategic Plan 2020-2025

### Stakeholder Expectations

Customer Feedback

### ENABLERS

#### Leadership & People

- Governance
- Skills & Competencies
- Roles & Responsibilities
- Training

#### Customer Communication

- Stakeholder Feedback
- Information & Publishing

#### Resourcing Management

- Service Level Agreements
- Procurements & Contracts

#### Strategic Asset Management Plan

- Strategic Objectives for KCCA's Road Network
- Service Levels for Engineering & Technical Services

#### Asset Data & Information Management

- Road Hierarchy, Inventory + Condition
- Road Inspections & Surveys
- iRoads – asset data storage and analysis

#### Asset Class Lifecycle Plans

- Deterioration Modelling & Analysis
- Funding & Budget Scenarios

#### Works Programme Development

- Scheme Prioritisation
- 3-5 year programme

#### OPERATIONS & WORKS DELIVERY

- Works Management
- Routine & Cyclic Maintenance Programme
- Delivery of Projects – Capital Programme
- Adverse Weather/Flood Management

#### PERFORMANCE MANAGEMENT

- Performance Management Framework (KPIs, etc)
- Non-conformance/Corrective Actions
- Continuous Improvement

### ENABLERS

#### Risk Management

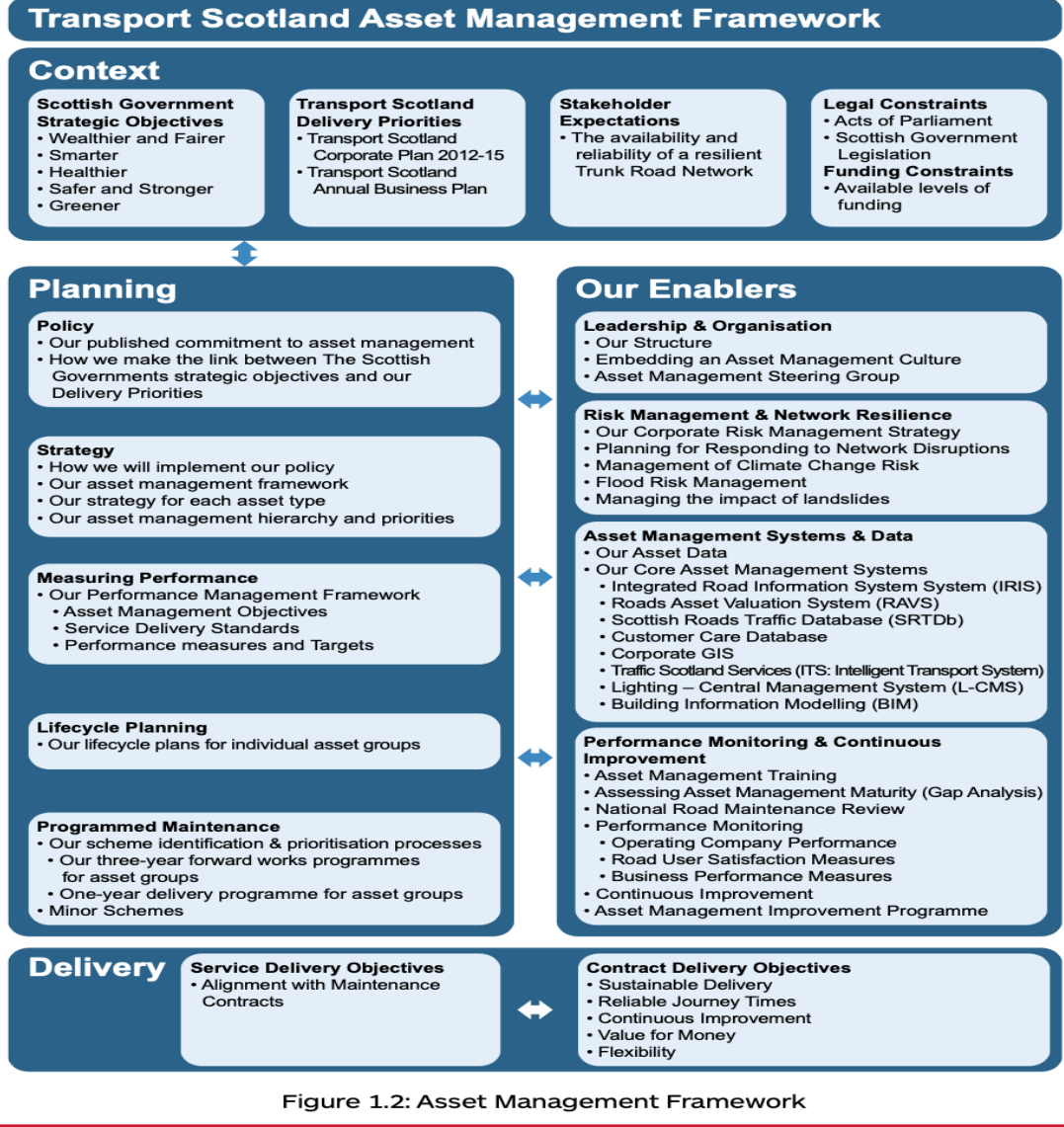
- Inspections & Analysis
- Risk ID and Mitigation
- Performance Evaluation

#### Financial Management

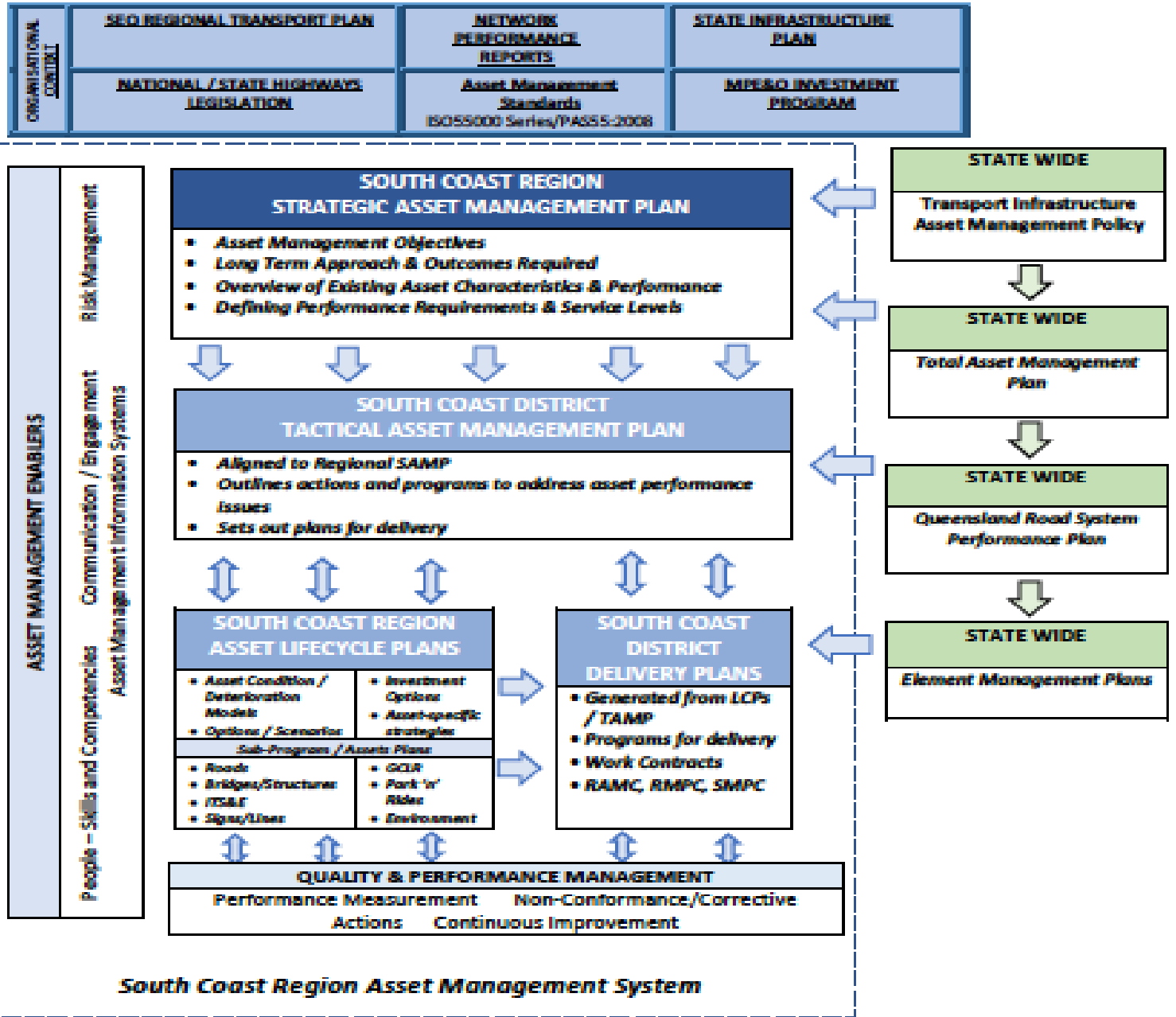
- Budget Control
- Asset Valuation
- Investment Strategies

#### AM Systems

- Information Systems
- Processes & Procedures
- Audit & Compliance



# Qld Dept of Main Roads South Coast Region Asset Management Framework



# What that means in actions:

## Strategy & Planning:

- Setting long term objectives and Service Levels for our Assets
- Creating AM Policy
- Developing Asset Plans and Work Plans
- 3-5 Year Programmes
- Lifecycle Planning

## Operational Delivery

- Reactive & Planned Maintenance
- Capital Projects & Renewals
- Contracts to deliver the work

## Performance & Improvement:

- Setting and measuring performance of road network – refer KPIs
- Non-conformance, improvement actions, action plans etc

## Enablers

- Building the supporting processes and capabilities to better manage their network:
  - Training
  - Risk Mgt
  - Financial Mgt
  - Systems and Processes

# What is Asset Management Planning?

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- The key function of Asset Management Plan/s are to achieve the successful delivery of the *Asset Management Strategy and Objectives*
- Asset Management Plans describes and documents ‘*HOW*’ the organization/department/team will deliver their works
- The Plans should address the various tasks that need to be implemented

# Typical Contents of Asset Management Plans

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1. Executive Summary
2. Background, Context & Introduction
3. Alignment to Policy, Strategy & Objectives
4. Asset Data & Information
  - Scope
  - Inventory
  - Condition/Age/Profile/Characteristics
5. Future Requirements
  - Asset Performance
  - Demand / Growth / Change
  - Environment/Context
  - National/Regional/Local Influence
  - Risks



# Typical Contents of Asset Management Plans

## 6. Lifecycle Planning Process & Outputs

- Data analysis and reporting
- Deterioration modelling
- Risks & Opportunities
- Costs & Value

## 7. Investment Strategies and Options

- Funding sources
- Timeframe/Duration
- RoI / CBA outputs

## 8. Programme Development

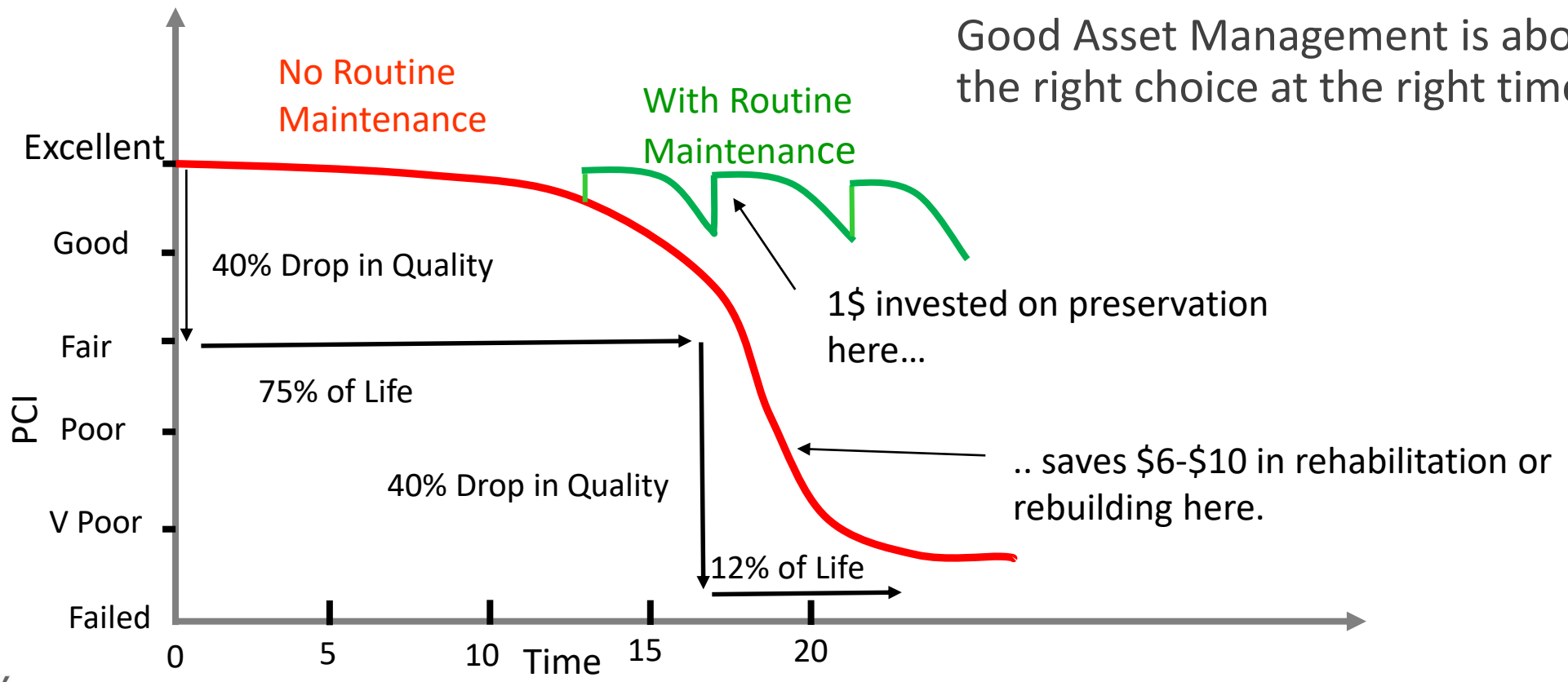
- Capital/Operations
- 3-5 year ideally

## 9. Improvement Actions

# OBJECTIVES OF ASSET LIFECYCLE PLANNING

- Identify long term investment for highway infrastructure assets and develop an appropriate ***maintenance strategy***.
- Predict future ***performance*** of highway infrastructure assets for different levels of investment and different maintenance strategies.
- Determine the ***level of investment*** required to achieve the required performance.
- Determine the performance that will be achieved for ***available funding*** and/or future investment.
- Support decision making, the case for investing in maintenance activities and demonstrate the ***impact of different funding scenarios***.
- ***Minimising costs*** over the lifecycle while maintaining the required performance.

# Managing the Life Cycle

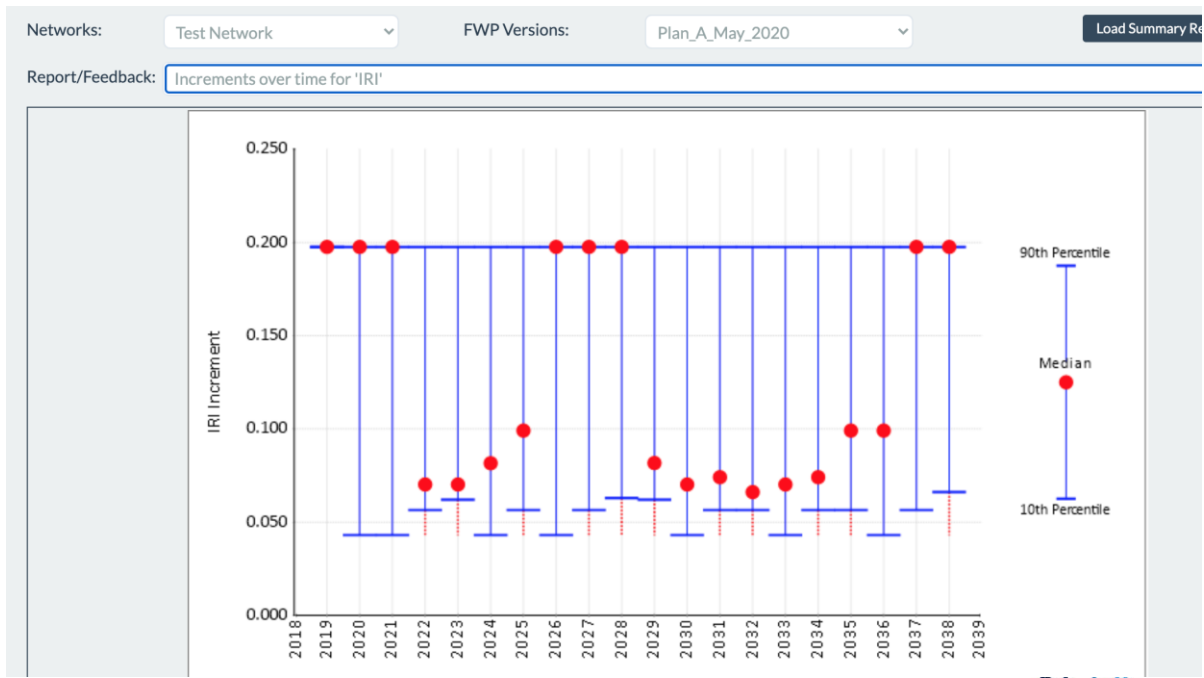
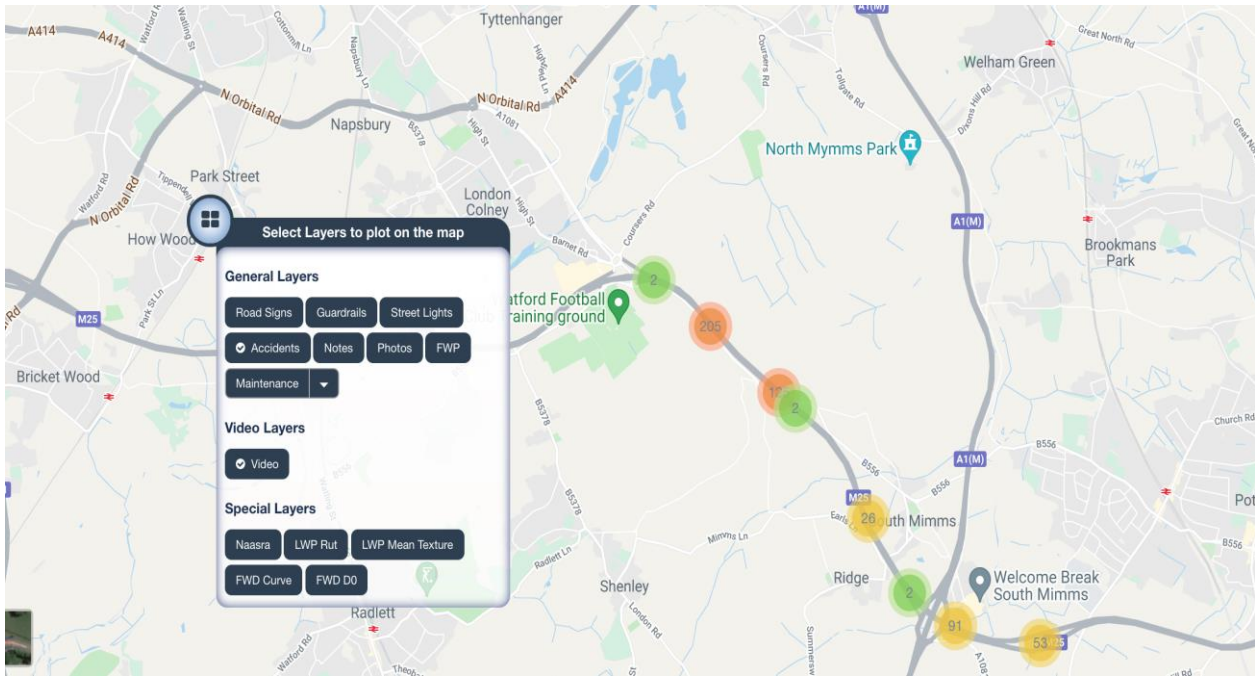


# Advantages of Road Asset Management System

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- Contains and maintains all relevant road asset data:
  - Road inventory
  - Location (ideally mapped to GIS interface)
  - Asset Condition (based on standard inspection monitoring)
- Allows analysis of asset data for deterioration
- Enables prediction of future asset performance – allows for more targeted interventions and maintenance treatments
- Maintains an up-to-date record of road assets (if populated)
- Provides visibility to all levels within organisation

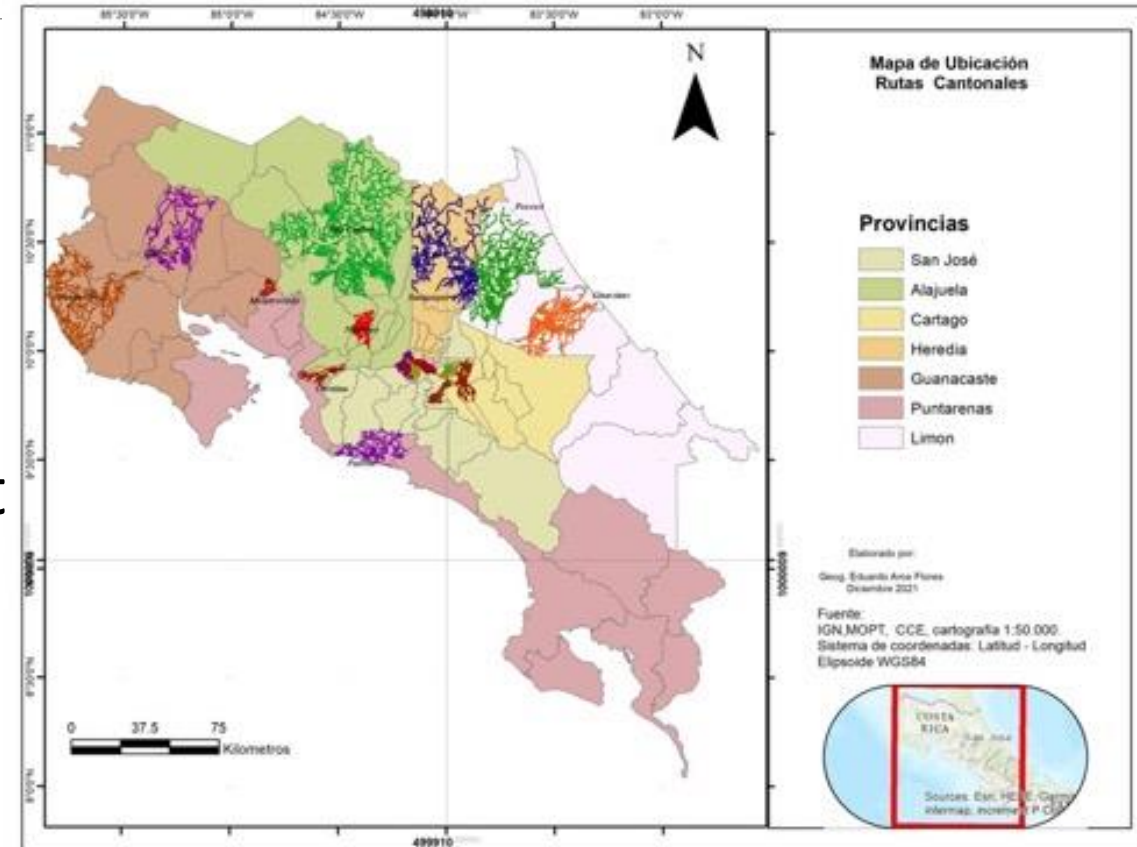
# Use of Road Asset Information to make decisions



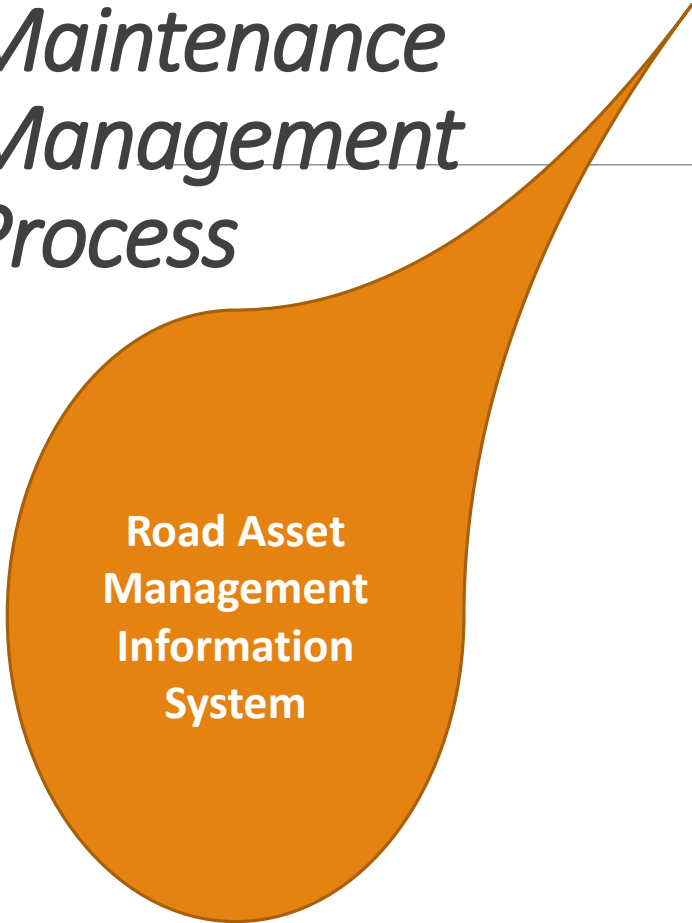
# Costa Rica SAGA System – Red Vial Cantonal (and Nacional)

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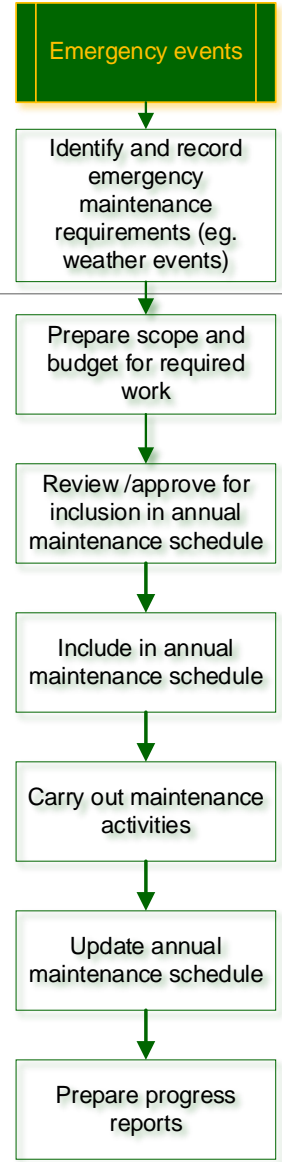
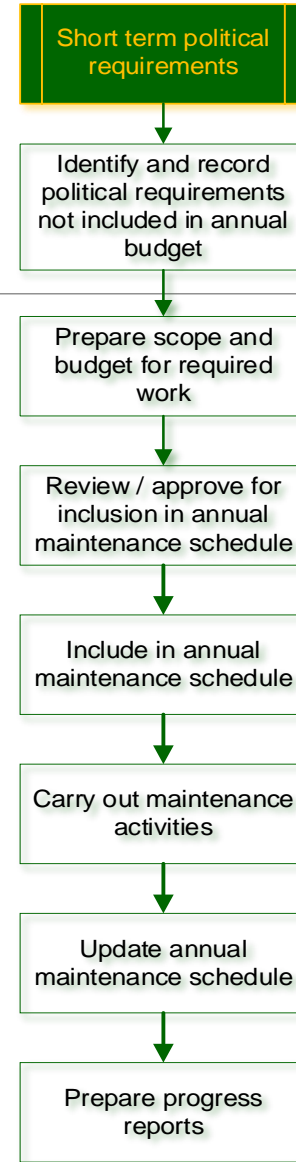
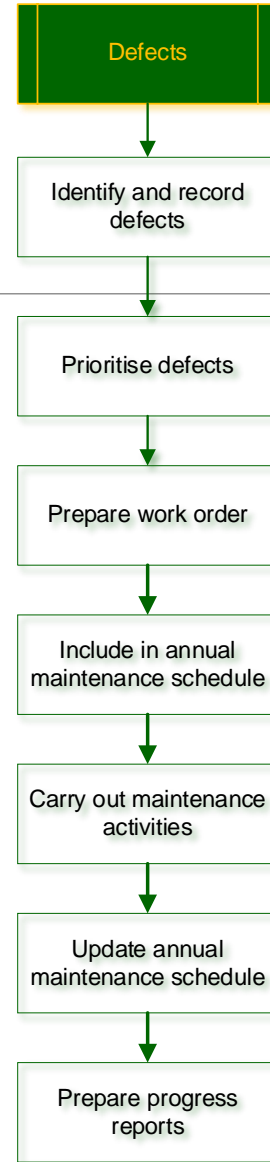
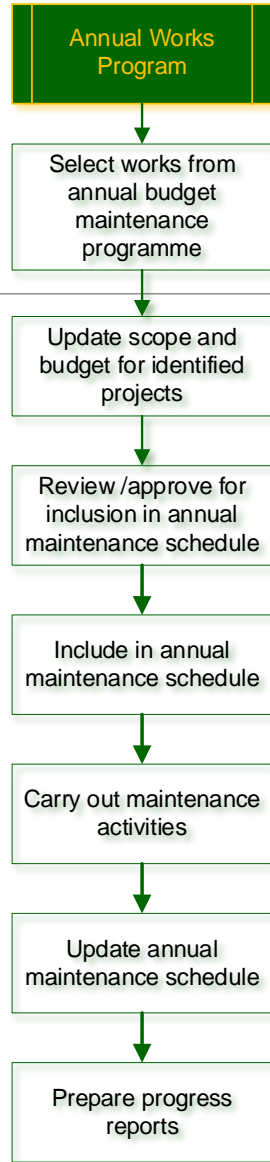
- Road Inventory & Condition
- Road performance forecasting / deterioration modelling
- Forward Works Programme development
- Bridge Condition Reporting
- Road Furniture & Non-road assets



# Maintenance Management Process



Road Asset Management Information System



# Some key learnings...

Determining and implementing your organization's Asset Management System - speed is important, progress is vital

- Effective Use of Asset Data & Information
  - Collection – What, How often, How, When? (Make it Fit for Purpose!!)
  - Analysis – outputs and skills to undertake
  - Decision-making – Outcomes, performance
- AM Systems are important but so is AM Processes
- Legislation & Policy to support Asset Management is vital



# Some key learnings...

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- Link your AM Plans to your organization's objectives – demonstrate alignment
- Develop relevant Plans for implementation
- Measure performance – not just on Asset performance but also Asset Management performance
- Communication & Engagement to demonstrate:
  - Asset Needs ↔ Funding / Budgets
  - Solutions & Options



# QUESTIONS??

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